



PATENT COOPERATION TREATY
PCT
INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference 14836-14PCT ADclb/b	FOR FURTHER ACTION		See Form PCT/PEAA416
International application No. PCT/CA2004/001030	International filing date (day/month/year) 14.07.2004	Priority date (day/month/year) 14.07.2003	
International Patent Classification (IPC) or national classification and IPC H01L21/02, H01L27/08, G05F3/30, G05F1/10			
Applicant MICROBRIGE TECHNOLOGIES INC. et al.			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p style="margin-left: 20px;">a. <input type="checkbox"/> sent to the applicant and to the International Bureau) a total of sheets, as follows:</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 13.05.2005		Date of completion of this report 18.11.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Frias Rebelo, A Telephone No. +49 89 2399-7451 	

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**INTERNATIONAL PRELIMINARY REPORT
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International application No.
PCT/CA2004/001030

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

1-31 as originally filed

Claims, Numbers

1-49 received on 17.05.2005 with letter of 13.05.2005

Drawings, Sheets

1/20-20/20 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
 - ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing *(specify):*
 - ☐ any table(s) related to sequence listing *(specify):*
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing *(specify):*
 - ☐ any table(s) related to sequence listing *(specify):*

* If item 4 applies, some or all of these sheets may be marked "superseded."

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**INTERNATIONAL PRELIMINARY REPORT
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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:
- ☐ the entire international application,
 - ☒ claims Nos. 1-49
because:
 - ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):
 - ☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 1-49 are so unclear that no meaningful opinion could be formed (*specify*):
see separate sheet
 - ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
 - ☐ no international search report has been established for the said claims Nos.
 - ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:
 - the written form ☐ has not been furnished
 - ☐ does not comply with the standard
 - the computer readable form ☐ has not been furnished
 - ☐ does not comply with the standard
 - ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.
 - ☐ See separate sheet for further details

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**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

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Re Item III**Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

1. The amendments of claim 1 do not go beyond the content of the application as filed and are therefore admissible.
2. The arguments stated by the applicant with letter dated 11.05.2005 concerning the technical features of the invention (see page 2, last two paragraphs therein) were carefully considered. However these arguments cannot be accepted as far as compliance with the requirements of Article 6 PCT are concerned.
The reasons will become apparent in the paragraphs 3. and 4. below.
3. Amended claim 1 still fails to meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The reasons are as follows:
 - 3.1 The essence of the method of the invention - see original specification e.g. page 9, lines 2 to 14; page 22, line 28 to page 23, line 6 - is related to a trimming step (B) where (the underlined text below is intended to specify the features not present in the present claim wording):
 - the trimming a resistance value and a temperature coefficient of resistance of (...) at least one thermally trimmable resistor to independent values R_{target} and TCR_{target} comprises
 - trimming the resistance of at least one thermally trimmable resistor to a certain target value R_{target} ; and after
 - trimming said temperature coefficient of resistance to a certain target value TCR_{target} by cycling said resistance value away from and back to R_{target} thereby using said hysteresis characteristic of said thermally trimmable resistor.

Since claim 1 does contain a method step (B) as recited above, it does not meet the

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requirement following from Article 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

- 3.2 An amended claim 1, clarified according to paragraph 3.1 above would also overcome the objection stated in the Written Opinion dated 31-01-2005 (see paragraph 1. therein) as it would make clear how the stated result of
- trimming a resistance value and a temperature coefficient of resistance (...) to independent values is actually achieved.
4. Amended claim 26 still fails to meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The reasons are as follows:
- 4.1 It is apparent from the description - see e.g. page 19, lines 8 to 11; and page 9, lines 2 to 14; page 22, line 28 to page 23, line 6- that the claimed apparatus, in order to attain the stated purpose of adjusting an output parameter by trimming independently the resistance and the TCR of a thermally trimmable resistor(s) must comprise (the underlined text below is intended to specify the features not present in the present claim wording):
- a circuit (...) wherein the resistance of at least one thermally trimmable resistor is trimmed to a certain target value R_{target} ; and
 - heating circuitry having a decision-making module(...)wherein each heating cycle trims said temperature coefficient of resistance(...) to a certain target value TCR_{target} by cycling said resistance value away from and back to R_{target} thereby using said hysteresis characteristic of said thermally trimmable resistor.

Since claim 26 does contain the features as recited above, it does not meet the requirement following from Article 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

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- 4.2 An amended claim 26, clarified according to paragraph 3.1 above would also overcome the objection stated in the Written Opinion dated 31-01-2005 (see paragraph 2. therein) as it would make clear how the claimed apparatus could attain the stated purpose of adjusting an output parameter of a circuit by trimming independently the resistance and the TCR of a thermally trimmable resistor(s) comprised in said circuit.
5. Amended independent claims 1 and 26 clarified according to paragraphs 2.1 and 3.1 above would also to meet the requirements of novelty (Article 33(2) PCT), inventive step (Article 33(3) PCT) and industrial applicability (Article 33(4) PCT).
6. The lack of clarity for independent claims 1 and 26 as presently worded, and as discussed in paragraphs 3 and 4 above, is to such an extent that makes impossible a complete examination on whether the subject-matter of these claims is novel, involves an inventive step or is industrially applicable (Articles 33(2), (3) and (4) PCT).
- 6.1 Due to the lack of clarity of present independent claims 1 and 26, a complete examination on whether the subject-matter of the dependent claims 2-25 and 27-49 is novel, involves an inventive step or is industrially applicable is also not possible at present (Articles 33(2), (3) and (4) PCT).

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